

Application No. 09/937172
Page 4

Amendment
Attorney Docket No H82.2I-10148-US01.

Remarks

Rejections

35 U.S.C. §112, second paragraph

Claims 1-8 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-8 have been canceled without prejudice. Applicant intends to pursue the scope of the canceled claims 1-8 within a divisional application.

35 U.S.C. §102(b)

GB 2 232 573

Claims 1-22 have been rejected under 35 U.S.C. §102(b) as being anticipated by GB 2 232 573. The Office Action asserts that GB 2 232 573 teaches an animal feed pellet which is formed by conventional extrusion, and then the extruded pellet is treated with an edible oil under reduced pressure. Prior to soaking in oil, the pellets are dried in a vacuum (page 2, lines 13-30; page 3, lines 19-36; page 6, lines 5-21]. The Office Action asserts that the apparatus and methods taught by GB 2 232 573 fully anticipated applicant's claims.

Claims 1-8 have been canceled without prejudice.

Claims 9-22 are pending.

GB 2 232 573 fails to teach a process whereby the pellets are extruded, exposed to a pressure lower than ambient pressure in a pellet chamber downstream from the discharge nozzle immediately subsequent to the extruding step, whereby the pellets expand and increase in pore volume; drying the pellets exposed to the pressure and subsequently adding oil to the pellets to increase the fat content for said pellets.

Claim 9 has been amended to clarify that the step of adding the oil to the pellets, is accomplished after having exposed the pellets to the lower pressure and drying the pellets.

GB 2 232 573, on the other hand, describes a process whereby edible liquids are added to feed pellets and absorbed into the pellets under conditions of reduced atmospheric pressure. The feed pellets are first formed by a conventional compact-

Application No. 09/937172
Page 5

Amendment
Attorney Docket No H82.2I-10148-US01.

pelletizing process, and then treated with edible liquid under reduced pressure. See page 3, lines 19-25. On page 6, lines 9-15, wherein the preferred procedure is described, it is stated that the pellets are subjected, after soaking in supplementary fish oil, to reduced pressure conditions, i.e. vacuum pressure.

GB 2 232 573 does not teach the step of adding the oil *subsequent* to the step of exposing the pellets to reduced pressure.

GB 2 232 573, on the other hand, describes treating the pellets with edible oil under reduced pressure. Thus, oil is added to the pellets at the *same time* as the pellets are exposed to reduced pressure.

Applicants submit that GB 2 232 573 does not teach exposing said extruded pellets to a first pressure lower than ambient pressure immediately subsequent to said extruding step, said exposure to said first pressure occurring in a pellet chamber downstream from said discharge nozzle, whereby said pellets expand and increase said pore volume.

In order to sustain a rejection under 35 U.S.C. §102(b), the processes must be the same, and every element of the claimed invention must be found in the reference. Applicants submit that the processes are not the same because GB 2 232 573 describes a process whereby the edible oil is added to the process at the *same time* as the pellet is exposed to reduced pressure, and GB 2 232 573 fails to teach a process whereby the oil is added *after* exposing the pellet to reduced pressure. Thus, claim 9 is patentably distinct over GB 2 232 573. Claims 10-13 depend from claim 9 and are patentable for at least the reasons that claim 9 is patentable.

Applicants respectfully request withdrawal of the rejection of claims 9-13 under 35 U.S.C. §102(b) as anticipated by GB 2 232 573.

With respect to claim 14 GB 2 232 573 does not teach a plant for manufacturing feed pellets including a pelletizing machine constructed and arranged for shaping the pellets, *a pellet chamber adjacent to and downstream from the pelletizing machine*, the pellet chamber having an outlet, the pellet chamber being constructed and arranged to expose the pellets to a pressure lower than ambient pressure and a tank containing oil, the tank being in communication with the outlet, the tank comprising a

Application No. 09/937172
Page 6

Amendment
Attorney Docket No H82.2I-10148-US01.

deep-frying container, the tank being constructed and arranged to expose said pellets to a second pressure lower than ambient pressure.

GB 2 232 573 describes no pellet chamber downstream from the palletizing machine wherein pellets may be exposed to a reduced pressure.

Furthermore, GB 2 232 573 describes no tank comprising a deep-frying container.

Consequently, GB 2 232 573 does not disclose all of the elements of claim 14 as required to maintain a rejection under 35 U.S.C. §102(b). Therefore, claim 14 is novel over GB 2 232 573. Claims 15-22 depend from claim 14 and are patentable for at least the reasons that claim 14 is patentable. Applicants respectfully request withdrawal of the rejection of claims 14-22 under 35 U.S.C. §102(b) as being anticipated by GB 2 232 573.

WO 98/499904

Claims 1, 5, 9 and 14 have been rejected under 35 U.S.C. §102(b) as being anticipated by WO 98/499904. The Office Action asserts that WO 98/499904 teaches a method and apparatus for extruding a mixture of basic fish feed ingredients, which is then extruded under ambient conditions; that WO 98/499904 teaches that prior to extrusion a pre-conditioning step can be done and then the mixture of matrix is extruded to form porous pellets; the extruders are generally single or twin-screw type extruders [page 5, 2nd paragraph]; the extruded pellet is then loaded into a chamber where vacuum coating takes place; between the vacuum coating steps, the atmosphere may be returned to atmospheric pressure before applying a second or subsequent coating; the increase in pressure forces the oil into the interior of the porous feed pellet {page 7, 2nd paragraph}.

Please note the typographical error: WO 98/499904 should read WO 98/49904. See form PTO-1449 submitted 1/26/04.

Applicants respectfully disagree with the asserted teachings of WO/98494104..

Applicants submit that WO 98/49904 describes a method for preparing high oil content fish feed pellets comprising extruding a mixture of basic components for

Application No. 09/937172
Page 7

Amendment
Attorney Docket No H82.2I-10148-US01.

forming the matrix of fish feed pellets together with an additive which is *solid* under ambient conditions into porous pellets. The additive is a lipid or a fatty acid (Abstract).

Prior to extrusion, the mixture may be subjected to conventional pre-conditioning. In pre-conditioning, the dry components of the feed and the liquid components, either heated or at ambient temperature, are separately introduced into a pre-conditioning device where they are continuously mixed, heated and moisturized by injection of hot water and/or steam. The apparatus used for pre-conditioning includes *atmospheric or pressurized chambers*. See page 4, second full paragraph.

The optionally pre-conditioned mixture is then extruded to form pellets. If the mixture has not been pre-conditioned, then oil may be added to the mixture at this stage.

In a subsequent step, oil is absorbed into the porous pellets to prepare the high oil content fish feed pellets. The extruded feed pellets may be loaded with oil immediately after extrusion, or may be stored for some time prior to the oil loading step. The loading of the feed pellets with oil can be carried out by mixing, dipping, spraying, or coating with other means. For example, loading can be carried out by subjecting the feed pellets and oil to the rotary mixing in a drum under normal pressure, but the operation can also be carried out under elevated or reduced pressure. See page 6.

In a preferred aspect, the loading is carried out at below ambient pressure and in particular, by vacuum coating as described in DE-A-2 933 261, EP-A-O 556 883 or GB-A-2 232 573. See page 7.

Claims 1 and 5 have been canceled.

Claim 9 has been discussed above.

WO 98/49904 does not disclose a step immediately subsequent extrusion and prior to addition of the oil, whereby the extruded pellets are exposed to a pressure lower than ambient pressure in a pellet chamber, which is downstream from the discharge nozzle of the extruder, whereby the pellets expand and increase in pore volume.

The arguments with respect to claim 14 as identified above related to the failure of the reference to teach a tank containing oil, the tank comprising a deep-frying container are equally applicable herein.

Application No. 09/937172
Page 8

Amendment
Attorney Docket No H82.21-10148-US01.

WO 98/49904 does not describe a tank containing oil comprising a deep-frying container.

Applicants respectfully request withdrawal of the rejection of claims 9 and 14 under 35 U.S.C. §102(b) as anticipated by WO 98/49904.

Likuski et al., U.S. 4,971,820

Claims 1, 5, 9 and 14 have been rejected under 35 U.S.C. §102(b) as being anticipated by Likuski et al. The Office Action asserts that Likuski et al. teach a method and apparatus for making a dough or mix of feed ingredients, which can be preconditioned with steam and then extruded into pellets.

Likuski et al., U.S. 4,971,820, is the same document as GB 2 232 573.

Claims 1 and 5 have been canceled.

Claims 9 and 14 are patentable over U.S. 4,971,820 for the same reasons that claims 9 and 14 are patentable over GB 2 232 573 as discussed above.

Applicants respectfully request withdrawal of the rejection of claims 9 and 14 under 35 U.S.C. §102(b) as being anticipated by Likuski et al., U.S. 4,971,820.

Nishioka et al., U.S. 6,440,477

Claims 1, 5, 9 and 14 have been rejected under 35 U.S.C. §102(e) as being anticipated by Nishioka et al. The Office Action asserts that Nishioka et al. teach a method of adding oil and fat to porous feed by providing a feed pellet made by extrusion which is then fed into a partially evacuated chamber of an oil and fat adding apparatus and withdrawing the coated or impregnated fat and oil enriched pellets from the oil and fat adding apparatus thus providing a high fat containing feed pellet. [Note the abstract, Figure 1, Column 3, line 35 et seq.]

Applicants respectfully disagree with the asserted teachings of U.S. 6,440,477.

Applicants submit that Nishioka et al. describe a method of adding oil and fat to porous feed wherein porous feed together with oil and fat are continuously inserted into a partially evacuated chamber or an oil and fat adding apparatus, while, simultaneously, porous feed that has remained therein for a specified time is continuously

Application No. 09/937172
Page 9

Amendment
Attorney Docket No H82.2I-10148-US01.

being removed from the chamber. The continuous nature of this method is alleged to allow porous feed having high fat and oil content to be produced more rapidly than previously possible (Abstract).

At col. 3, lines 42-57, of the '477 reference it is stated that various components for feed are poured into a mixer to which fat and oil, water and water vapor, are added and heating and mixing are conducted. The resultant mixture is poured into an extruder. In the extruder, vapor is added to the material and the mixture is *pressurized* and kneaded, extruded and molded, then dried by a dryer and cooled by a cooler. The porous feed is fed into a fat and oil adding apparatus and maintaining a reduced condition for further addition of fat and oil, and stored inside for about 2 minutes, to which is added fat and oil, and then discharged. The fat and oil adding apparatus may be decompressed and pressure returned to normal several times (see claim 6).

Claims 1 and 5 of the present application have been canceled.

Claim 9 has been discussed above.

Applicants submit that Nishioka et al. does not describe exposing extruded pellets to a pressure lower than ambient pressure in a pressure chamber immediately subsequent to extruding, to expand and increase the pore volume of the pellets, prior to addition of the oil to the pellets.

Nishioka et al., in contrast, describes reducing the pressure during the step in which the oil and fat are added, which is after drying and cooling, both of which follow extrusion. However, Nishioka et al. describes no step immediately after extrusion, but prior to drying or addition of the oil, in which the pellets are exposed to reduced pressure in a chamber for increasing pore volume.

Thus, Nishioka et al. does not disclose all of the elements of claim 9. The inventions are thus not the same as required under 35 U.S.C. §102(b). Applicants respectfully request withdrawal of the rejection of claim 9 under 35 U.S.C. §102(b) as anticipated by Nishioka et al.

Claim 14 has been discussed above.

The Nishioka et al. '477 reference fails to teach a pellet chamber adjacent to and downstream from a pelletizing machine, the pellet chamber having an outlet and being constructed and arranged to expose the pellets to a pressure lower than ambient

Application No. 09/937172
Page 10

Amendment
Attorney Docket No H82.2I-10148-US01.

pressure. The Nishioka et al. '477 reference also fails to teach the outlet of the pellet chamber being connected to an oil tank or a drying plant, to which the pellet is transferred. The oil tank may also be at a pressure lower than that of the surroundings.

There is no pellet chamber described in Nishioka et al.

The fat and oil adding apparatus as described by Nishioka et al. is a drum mixer type fat and oil adding apparatus which has conventionally been used or a paddle mixer type fat and oil adding apparatus. The entire fat and oil adding apparatus is accommodated and used in a pressure vessel, a rotary valve, a double damper etc., and supply and discharge of porous feed are continuously conducted while maintaining a reduced condition.

Consequently, the inventions are not the same as required under 35 U.S.C. §102(b) because each and every element of the claimed invention is not disclosed by Nishioka et al. Applicants respectfully request withdrawal of the rejection of claim 14 under 35 U.S.C. §102(b) as anticipated by Nishioka et al., U.S. 6,440,477.

Munz, U.S. 6,136,353

Claims 1, 5, 9 and 14 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Munz. The Office Action asserts that Munz teaches a method and apparatus for incorporating fatty matter into a granulated extrudate such as pellets with a fat supplying liquid. Specifically, the extruded or expanded product is placed into a drier and the expanded product or pellet is dried and cooled and the pellets or expanded products are subjected to a mixer where a preset quantity of dried product is mixed with a liquid fat, a vacuum pump is used during the mixing process where a negative pressure is created in the mixture as a result the pores or the capillaries of the pellets or expanded product releases air and is replaced by the oil or fat containing liquid on the surface. [Note the abstract and column 3, lines 40-67 and column 4, lines 14-43.]

Applicants respectfully disagree with the asserted teachings of U.S. 6,136,353.

Claims 1 and 5 have been canceled.

Claim 9 has been discussed above.

Application No. 09/937172
Page 11

Amendment
Attorney Docket No H82.2I-10148-US01.

Applicants submit that Munz describes a method for incorporating fatty matter into granulated feed products such as extrudates, pellets and expander pellets with a fat supplying liquid which includes producing pellets in the extruder or expander or press, drying the pellets in a dryer, and passing the pellets through an intermediate container and into a mixer. A fat-supplying liquid is then added to the mixer and spread on the surface of product pieces through the mixing process. After a predetermined period of time, a vacuum pump generates a negative pressure in the mixer so as to evacuate the air from capillaries or pores of the product pieces. The negative pressure is then relieved through an expansion valve so that the air entering into the mixer and into the pores or capillaries of the product pieces transports the fat-supplying liquid into the pores and capillaries, thereby filling them to the extent that a high proportion of approximately 30% fat-supplying liquid is incorporated in the pores or capillaries of the product pieces (abstract).

Thus, in the process as described by Munz, negative pressure is applied during mixing of the fat-supplying liquid and the product pieces in a mixer. This step follows extrusion, drying the pellets in a dryer, passing the pellets through an intermediate container and then into the mixer. There is no further guidance as to what configuration the intermediate container has.

Consequently, it is during mixing of the product pieces and oil wherein negative pressure is applied.

Munz does not describe exposing extruded pellets to a pressure lower than ambient pressure immediately subsequent to said extruding step in a *pressure chamber* downstream from the discharge nozzle of the extruder, whereby the pore volume of the pellets is expanded and increased. Munz fails to teach the application of pressure lower than ambient to the pellets in order to increase and expand pore volume which occurs immediately after extrusion but prior to addition of the oil.

Consequently, each and every element of claim 9 is not disclosed by Munz as required under 35 U.S.C. §102(e). Applicants respectfully request withdrawal of the rejection of claim 9 under 35 U.S.C. §102(e) as anticipated by Munz, U.S. 6,136,353.

Accordingly, Munz also does not disclose the pellet chamber for exposing the pellets to a lower pressure or the pellet chamber being adjacent to and downstream

Application No. 09/937172
Page 12

Amendment
Attorney Docket No H82.2I-10148-US01.

from a pelletizing machine, the pellet chamber having an outlet which is in communication with a tank containing oil, the pellet chamber being constructed and arranged to expose said pellets to a pressure lower than ambient pressure.

As noted above, Munz describes an intermediate container, but no further configuration or function of this intermediate container is specified.

Consequently, there is no corresponding structure disclosed by Munz that is the same as claim 14. As Munz is missing an element of the invention of claim 14, the inventions are not the same as required by 35 U.S.C. §102(e). Applicants respectfully request withdrawal of the rejection of claims 9 and 14 under 35 U.S.C. §102(e) as anticipated by Munz, U.S. 6,136,353.

CONCLUSION

Claims 9-22 are pending in the application. Applicants have addressed each of the issues presented in the Office Action. Based on the foregoing amendments and arguments, Applicants respectfully request reconsideration, and an early allowance of the claims as presented.

Respectfully submitted,

VIDAS, ARRETT & STEINKRAUS

Date: June 29, 2004

By: 

Edwin E. Voigt II
Registration No.: 36042

6109 Blue Circle Drive, Suite 2000
Minnetonka, MN 55343-9185
Telephone: (952) 563-3000
Facsimile: (952) 563-3001

F:\PWORK\EEV\AMEND-PAT\10148US01_AMD_20040618.DOC